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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/229,849 01/13/99 SERRANO

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EXAMINER

ELEURANTIN, J

ART UNIT

PAPER NUMBER

2172
DATE MAILED:

07/03/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/229,849

Applicant(s)
Martin Serrano

Examiner
Jean Bolte Fleurantin

Art Unit
2172



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Apr 24, 2001
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8-12, 17-21, 26, and 27 is/are rejected.
- 7) ☒ Claim(s) 4-7, 13-16, and 22-25 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other: _____

Art Unit: 2172

DETAILED ACTION

Response to Amendment

1. Claims 19-27 are added. And Claims 1-27 are remained for examination.

Applicant's arguments filed on April 24, 2001 on pages 4 through 6 with respect to claims 1-2, 10-11, & 19-20 have been considered but are moot in view of the new ground(s) of rejection. And, the added claims are discussed in the following rejection.

Claim Rejections - 35 U.S.C. § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 8-12, 17-21, and 26-27 are rejected under 35 U.S. C. 103 (a) as being unpatentable over Andrews et al. (US Pat. No. 5,768,564).

As per claims 1, 10, and 19 Andrews substantially teaches a method for parallelizing a computer application program based on a script of a script-driven software tool (thus, each token is also associated with a fragment indicating which virtual source production mechanism brought it into the virtual source, which is readable as application program based on a script of a script-driven software tool) (see figure 4, element 17, col. 6, lines 36-41). But, does not explicitly indicate step of comprising automatically analyzing the script and producing a parallel computation specification based on such analysis, where such parallel computation specification

Art Unit: 2172

provides functional equivalence to the script when executed by a parallel runtime system. However, implicitly shows the step of a fragment represents the result of an innovation of a virtual source production mechanism source file inclusion macro expansion or micro formal parameter substitution, each fragment is linked to the tokens that make up its invocation syntax a macro formal parameter, including the parameter list or a token representing a source inclusion directive, each fragment contains the tokens composing its expansion a macro actual parameter or an included file, which is readable as functional equivalence to the script when executed by a parallel runtime system (see col. , lines). Also, in column 6, lines 36 through 40, Andrews teaches tokens appear on the leaves of the otherwise traditional abstract syntax tree each token is also associated with a fragment indicating which virtual source production mechanism brought it into the virtual source. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Andrews with the step of functional equivalence to the script when executed by a parallel runtime system. This modification would allow the teachings of Andrews to provide a method of translating code from a source computer language to a target while preserving the processor characteristics of the code as written in the source language, and a data structure useful for automated translation (see col. 2, lines 61-65).

As per claims 2, 11, and 20, in addition to the discussion in claim 1, Andrews does not explicitly indicate the step of the where such parallel computation specification and script fragment set provides functional equivalence to the script when executed by a parallel runtime system. However, Andrews implicitly Shows the step of a fragment represents the result of an

Art Unit: 2172

innovation of a virtual source production mechanism source file inclusion macro expansion or micro formal parameter substitution, each fragment is linked to the tokens that make up its invocation syntax a macro formal parameter, including the parameter list or a token representing a source inclusion directive, each fragment contains the tokens composing its expansion a macro actual parameter or an included file, which is readable as such parallel computation specification and script fragment set provides functional equivalence to the script when executed by a parallel runtime system (see col. 5, lines 46-55). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Andrews with the step of parallel computation specification and script fragment set provides functional equivalence to the script when executed by a parallel runtime system. This modification would allow the teachings of Andrews to improve the accuracy and the reliability of the parallelization applications of script driven tools, and provide invoking the shorthand expression triggers a text substitution when the source code is run through the processor (see col. 2, lines 32-34).

As per claims 3, 12, and 21, in addition to the discussion in claim 1, Andrews teaches constructing a serial dataflow graph from the parsed statements (thus, fragment tree and syntax tree including the tokens that link them it also depicts a semantically equivalent C++ fragment tree and syntax tree including the tokens that link them, which readable as serial dataflow graph from the parsed statements) (see figure 11, col. 22, lines 24-28);

(c) constructing a parallel dataflow graph from the serial dataflow graph (see figure 10, col. 22, 1 lines 31-35).

Art Unit: 2172

As per claims 8, 17, and 26, the limitations of claims 8, 17, and 26 are rejected in the analysis of claim 1 above, and these claims are rejected on that basis.

As per claims 9, 18, and 27 Andrews substantially teaches a method as claimed, wherein producing the parallel computation specification includes applying at least one pre-defined parallelization rewrite algorithm selected from the group comprising simple partitioning, key-based partitioning, local-global division, external parallelism algorithm, and statement decomposition (thus, others have used knowledge based systems to extract the meaning of the source program and rewrite it in the target language, which is readable as external parallelism algorithm) (see col. 2, lines 16-20).

Allowable Subject Matter

3. Claims 4-7, 13-16, and 22-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As per claims 5-7, 14-16, and 23-25, the prior art of record fails to teach or suggest: determining, for each processing step identified in the parallel processing step table, if a corresponding pre-defined parallelization rewrite rule exists for such processing step, and if so, then applying the corresponding pre-defined parallelization rewrite rule to redefine associated entries in the parallel data set table, the parallel processing step table, and the data set access table as parallel processing entries; and if not, then defining such associated entries as serial processing entries.

Art Unit: 2172

As per claims 4, 13, and 22, the prior art of record fails to teach or suggest: constructing a serial dataset table of datasets used by the script; constructing a serial processing step table of statements performed by the script; and constructing a serial data set access table indicating datasets in the data set table used by statements in the processing step table.

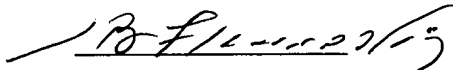
4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Andrews et al. US Patent No. 6,031,993 translation between high level computer programming language.

Conclusion

5. Any inquiry concerning this communication from examiner should be directed to Jean Bolte Fleurantin at (703) 308-6718. The examiner can normally be reached on Monday to Friday from 7:30 A.M. to 6.00 P.M.

If any attempt to reach the examiner by telephone is unsuccessful, the examiner's supervisor, Mrs. KIM VU can be reached at (703) 305-8449. The FAX phone number is (703) 305-9731.

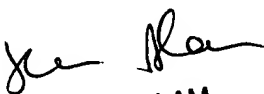
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone is (703) 305-9600.



Jean Bolte Fleurantin

July 1, 2001

JBf/


HOSAIN T. ALAM
PRIMARY EXAMINER